Logo

STUDENT REPORT

DETAILS

Name

ZIHAN

Roll Number

3BR23EE113

EXPERIMENT

Title

NUMBER OF COMBINATIONS LEADING TO A PRODUCT

Description

Problem Statement:

You are given an array arr and a product m. Your task is to find the number of possible unique triplets whose product of elements is m.

Input Format:

- The first line contains the integer, n
- The second line contains space seperated integers of the array, arr
- The third line contains the product m.

The input will be read from the STDIN by the candidate

Output Format:

The output consists of a single integer, i.e. the count of unique triplets having product m.

The output will be matched to the candidate's output printed on the STDOUT

Example:

Input:

7

5 3 20 10 1 4 2

60

Output:

3

Explanation:

Product m:60

Possible triplets for product m: (5,4,3),(20,3,1), (10,3,2)

The count of unique triplets is 3.

Source Code:

```
from itertools import combinations
import math

def count_triplets_with_product(arr, m):
    count = 0

    # Generate all unique triplets using combinations
from itertools
    for triplet in combinations(arr, 3):
        # Calculate the product of the triplet
        product = math.prod(triplet)

        # If product matches m, increment the count
        if product == m:
            count += 1

    return count

# Input handling
n = int(input())  # First input: the size of the array
arr = list(map(int, input().split()))  # Second input:
space-separated integers as the array
m = int(input())  # Third input: the product to match

# Call the function and print the result
print(count_triplets_with_product(arr, m))
```

RESULT

6 / 6 Test Cases Passed | 100 %